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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/705,356	JIANG, SAM SHIAW-SHIANG
		Examiner	Art Unit
		DeWanda Samuel	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-17* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-17* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *10 November 2003* is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 09/06/2007 with respect to claim 1-17 have

been fully considered but they are not persuasive for the following reasons.

4.   Applicant alleges " if the value of the N l_{ength} field is not equal to 0

discarding data octets in the PDU if the value of the NLENGTH field is not equal

to O; discarding data octets in the PDU having its SN equal to N_MRWLENGTH

up to and including the data octet indicated by the first "Length Indicator" field of

the same PDU" and that the claimed invention "discards one LI (The first LI) and

the corresponding data octets in PDU with SN + SN_MRW length ".

Examiner respectfully disagrees, Yi et al. discloses when the NLENGTH

is greater than 0 the receiver preferably discards the first NLENGTH LIs (length

indicator) and the corresponding data octets in the PDU with sequence number

SN MRWLENGTH (column 11 line 24-27). The first N_{LENGTH} LIs discard the

first LI along with any other N_{LENGTH} LIs (length Indicators). Also, the claimed

invention did not specify the how many LI(length Indicators) was discarded in

claim 9. However, Yi et al. teaches the claimed invention.

Applicant alleges " "while there exists a SN_MRWi field, other than the

SN_MRWLENGTH field, containing the same value as the SN_MRWLENGTH

field has, deleting the SN_MRWi field containing the same value as the

SN_MRWLENGTH field has".

Examiner respectfully disagrees, Torsner et al. discloses having a mechanism for

avoiding ambiguities between originally-transmitted and retransmitted data units

(page 4 paragraph 45)... a determination on whether a data unit with a sequence

number was previously received and discarding the data unit if valid

determination was made.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   **Claims 9-10 and 16-17** are rejected under 35 U.S.C. 102(e) as being

anticipated by Yi et al. (US Patent 7,054,270).

With regard to claim 9, Yi et al. discloses having a modified MRW

procedure to prepare a status PDU with a MRW SUFI, which is used by a sender

to inform a receiver about moving its reception window boundaries or these

SDUs should be discarded, Yi et al. discloses having a method utilizing MRW

(move receiving window) technique with PDU within the MRW SUFI (move

receiving window super field).., further "transmitting discard information about the

discarded RLC SDU to the receiving side entirety when the transmission MRW

(move receiving window) mode indicator is configured (column line 6 line 61-64).

wherein the procedure sets up the fields of a MRW SUFI, such as Type,

LENGTH, SN_MRWi, SN, MRWLENGTt-I (the last SN_MRVVi field) and

NLENGTH   according (fig.3 and column 9 line 47-67); Yi et al. discloses having

in fig. 3 a MRW SUFI with a type, LENGTH, SN_MRWi, SN_MRWLENGTH (the

last SN_MRW field) and NLENGTH (fig.3 and column 9 line 47-67).

and each PDU has been assigned a corresponding sequential number (SN), Yi

et al. discloses the a sequence number mode of a PDCP layer is set, the PDCP

layers of transmission and receMng sides reconcile the sequence numbers of

PDCP PDUs (i.e. RLC SDU, column 9 line 6-9)...also in fig.5 Yi et al. discloses

the each PDUs is assigned corresponding sequential numbers.

·wherein the method comprises the steps of." at the receiver', receiving a status

PDU with a MRW SUFI from the sender; checking the value of the LENGTH field

and discarding PDUs accordingly; Yi et al. discloses that the receiving side have

received the MRW SUFI from the transmitting side the receiving side also

discards the discards the PDUs PDU0 to PDU6. The PDUs are those which have

sequence numbers equal to or lower than "7" (which is the parameter SN_MRW

included in the MRW SUFI (column 12 line 40-47).

if the value of the NLEN~TH field is equal to 0; reassembling data from the first

data octet of the PDU having its SN equal to SN MRWLENGTH; Yi et al

discloses when the NLENGTH-0 (column 11 line 19)... a NLENGTH equal to 0

indicates that the last SDU ended in the PDU with sequence number

SN_MRWLENGTH-1 and that the first data octect in the PDU with sequence

number SN_MRWI.ENGTH is the first data octet to be reassembled next (

column 11 line 33-37).

if the value of the NLENGTH field is not equal to O; discarding data octets in the

PDU having its SN equal to SN_MRWLENGTH up to and including the data octet

indicated by the first "Length Indicator" field of the same PDU; Yi et al. discloses

when the NLENGTH is greater than 0 the receiver preferably discards the first

NLENGTH LI (length indicator) and the corresponding data octets in the PDU

with sequence number SN MRWLENGTH (

column 11 line 24-27).

and reassembling data from the succeeding data octet after the last discarded

data octet of the PDU having its SN equal to SN MRWLENGTH. Yi et al.

discloses a NLENGTH equals to 0 indicates that the last SDU ended in the PDU

with the sequence number SN_MRWLENGTH-1 and that the first data octet in

the PDU with the sequence number SN_MRWLENGTH is the first data octet to

be reassembled next (column 11 line 33-37).

With regard to claim 10, Yi et al. teaches the method recited in claim 9.

Wherein checking the value of the LENGTH field and discarding PDUs

accordingly; Yi discloses having a MRW SUFI that includes location information

of each of the discarded and a value parameter LENGTH... in fig. 5 the LENGTH

becomes "4" which is represents four parameters of SN_MRW1 and SN_MRW4

and they in turn represent the sequence numbers of the PDUs... (column 11 line

55-63)... in addition, it is only necessary to inform the receiving side ("receiver")

of the location information of the last discarded one of the discarded SDUs (

column 12 line 28-31)... the receiving side, having received the MRW SUFI

discards PDUs...(column 12 line 41-42).

further comprising the steps of." if the value of the LENGTH field is equal to O; Yi

et al. discloses checking if the if the LENGTH field is set to "0000" (column 10

line 52-53).

processing the received MRW SUFI as if there is only one SN_MRWi field,

SN MRWLENGTH; Yi et al. discloses when the last transmitted SDU exceeds or

is out of the range of the transmission window however, the field of the

parameter LENGTH is set to "0000"... when the discarded information of the

transmitting side transmitted to the receiving side, the transmitting side radio

system transmits the information of the discarded SDUs, either entirely or in part,

to the receiving side according to whether the transmission MRW mode indicator

is configured for its RLC layer by the RLC layer (column 10 47-60).

otherwise if the value of the LENGTH field is not equal to O; Yi et al. discloses

having a value of the parameter LENGTH is "1" (fig. 6).

processing the received MRW SUFI as if there are LENGTH number of

SN_MRWi fields, SN_MRWl up to SN MRWLENGTH; and discarding PDUs up to

and including the PDU having its SN equal to (SN MRWLENGTH -1). Yi et al.

discloses the receiving side having received the MRW SUFI discards PDUs

PDU0 to PDU6. The discarded PDUs are those which have sequence numbers

equal to or lower than "7" which is the parameter SN_MRW included in the MRW

SUFI (column 12 line 41-47).

With regard to claim 16, Yi et al. discloses A receiver using a modified

MRW procedure to receive a status PDU with a MRW SUFI, which is sent by a

sender to inform the receiver about moving its reception window boundaries or

these SDUs should be discarded, Yi et al. discloses "transmitting discard

information about the discarded RLC SDU to the receiving side entirety when the

transmission MRW (move receiving window) mode indicator is configured.

wherein the procedure sets up the fields of a MRW SUFI, such as Type,

LENGTH, SN_MRWi, SN_MRWLENCTH (the last SN_MRWi field) and

NLENCTH accordingly; Yi et al. discloses having in fig. 3 a MRW SUFI with a

type, LENGTH, SN_MRWi, SN_MRWLENGTH (the last SN_MRW field) and

NLENGTH.

and each PDU has been assigned a corresponding sequential number (SN), Yi

et alo discloses the a sequence number mode of a PDCP layer is set, the PDCP

layers of transmission and receiving sides reconcile the sequence numbers of

PDCP PDUs (i.e. RLC SDU, column 9 line 6-9)..also in fig.5 Yi et al. discloses

the each PDUs is assigned corresponding sequential numbers. .

wherein the receiver comprises: means for receiving a status PDU with a MRW

SUFI from the sender; means for checking the value of the LENGTH field and

discarding PDUs accordingly; Yi et al. discloses that the receiving side have

received the MRW SUFI from the transmitting side the receiving side also

discards the discards the PDUs PDU0 to PDU6. The PDUs are those which have

sequence numbers equal to or lower than "7" (which is the parameter SN_MRW

included in the MRW SUFI (column 12 line 40-47).

means for checking if the value of the NLENGTH field is equal to 0;means for

reassembling data from the first data octet of the PDU having its SN equal to

SNMRWLENGTH; Yi et al discloses when the NLENGTH=0 (column 11 line

19)... a NLENGTH equal to 0 indicates that the last SDU ended in the PDU with

sequence number SN_MRWLENGTH-1 and that the first data octect in the PDU

with sequence number SN_MRWLENGTH is the first data octet to be

reassembled next (column 11 line 33-37).

means for checking if the value of the NLENGTH field is not equal to O;means

for discarding data octets in the PDU having its SN equal to SN MRWLENGTH

up to and including the data octet indicated by the first "Length Indicator" field of

the same PDU; Yi et al. discloses when the NLENGTH is greater than 0 the

receiver preferably discards the first NLENGTH LI (length indicator) and the

corresponding data octets in the PDU with sequence number SN_MRWLENGTH

(column 11 line 24-27).

and means for reassembling data from the succeeding data octet after the last

discarded data octet of the PDU having its SN equal to SN MRWLENGTH. Yi et

al. discloses a NLENGTH equals to 0 indicates that the last SDU ended in the

PDU with the sequence number SN_MRWLENGTH-1 and that the first data octet

in the PDU with the sequence number SN MRWLENGTH is the first data octet to

be reassembled next

(column 11 line 33-37).

With regard to claim 17, Yi et al. teaches the receiver recited in claim 16.

Wherein means for checking the value of the LENGTH field and discarding PDUs

accordingly; Yi discloses having a MRW SUFI that includes location information

of each of the discarded and a value parameter LENGTH... in fig. 5 the LENGTH

becomes "4" which is represents four parameters of SN_MRW1 and SN_MRW4

and they in turn represent the sequence numbers of the PDUs... (column 11 line

55-63)... in addition, it is only necessary to inform the receiving side ("receiver")

of the location information of the last discarded one of the discarded SDUs (

column 12 line 28-31)...the receiving side, having received the MRW SUFI

discards PDUs... (column 12 line 41-42).

further comprising: means for checking if the value of the LENGTH field is equal

to O; Yi et al. discloses checking if the if the LENGTH field is set to "0000" (

column 10 line 52- 53).

means for processing the received MRW SUFI as if there is only one SN_MRWi

field, SN_MRWLENGTH; Yi et al. discloses when the last transmitted SDU

exceeds or is out of the range of the transmission window however, the field of

the parameter LENGTH is set to "0000"...when the discarded information of the

transmitting side transmitted to the receiving side, the transmitting side radio

system transmits the information of the discarded SDUs, either entirely or in part,

to the receiving side according to whether the transmission MRW mode indicator

is configured for its RLC layer by the RLC layer (column 10 47-60).

means for checking if the value of the LENGTH field is not equal to 0; Yi et al.

discloses having a value of the parameter LENGTH is 1" (fig. 6).

means for processing the received MRW SUFI as if there are LENGTH number

of SN_MRWi fields, SN_MRWI up to SN MRWLENGTH; Yi et al. discloses the

receiving side having received the MRW SUFI discards PDUs PDU0 to PDU6.

The discarded PDUs are those which have sequence numbers equal to or lower

than "7" which is the parameter SN_MRW included in the MRW SUFI (column 12

line 41-47).

and means for discarding PDUs up to and including the PDU having its SN

equal to (SN MRWLENGTH - 1). Yi et al. discloses having a last SDU end the

PDU with sequence number SN MRWIENGTH-1 to be discarded (column 11

line 28-36).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

5. **Claims 1-8 and 11-15** are rejected under 35 U S.C 103(a) as being

unpatentable over Yi et al (US Patent 7,054,270) in view of Torsner et al (PG

PUB 2003/0169741).

    With regard to claim 1, Yi et al. discloses having a modified

MRWprocedure to prepare a status PDU with a MRW SUFI, which is used by a

sender to inform a receiver about moving its reception window boundaries or

discarding certain SDUs, Yi et al. discloses having a method for transmitting data

from the RLC layer in radio communication (title). Yi et al. further discloses

"transmitting discard information about the discarded RLC SDU to the receiving

side entirety when the transmission MRW (move receiving window) mode

indicator is configured.

wherein the procedure sets up the fields of a MRW SUFI, such as Type,

LENGTH, SN_MRW, SN_MRWLENTH (the last SN_MRW field) and NLENGTH

accordingly (fig.3 and column 9 line 47-67); Yi et al. discloses having in fig. 3 a

MRW SUFI with a type, LENGTH, SN_MRWi, SN MRWLENGTH (the last

SN_MRW field) and NLENGTH and each PDU has been assigned a

corresponding sequential number (SN), Yi et al. discloses the a sequence

number mode of a PDCP layer is set, the PDCP layers of transmission and

receiving sides reconcile the sequence numbers of PDCP PDUs (i.e. RLC SDU,

column 9 line 6-9):.also in fig.5 Yi et al. discloses the each PDUs is assigned

corresponding sequential numbers.

wherein the method comprise the steps of at the sender: triggering the MRW

procedure upon a plurality of trigger events; Yi et al. discloses the a sequence

number mode of a PDCP layer is set, the PDCP layers of transmission and

receiving sides reconcile the sequence numbers of PDCP PDUs (i.e. RLC SDU).

Therefore, the MRW mode set indicator should be configured (column 9 line 6-

10).

checking the status of a "Send MRW" and acting accordingly; Yi et al. discloses

in fig. 7 a flow chart that has a instruction to check the transmission MRW (move

receiving window) indicator 740 and further instructions are given according to

the result of the status.

setting up the SN MRWLENGTH field for the last discarded SDU and the

NLENGTH field accordingly; Yi et al. discloses "the parameter N_MRWLENGTH

which represents the sequence number of the PDU which belongs to (indicates)

an end of the last discarded SDU (column 10 line 331-34)... NLENGTH which

indicates that the last discarded SDU corresponds sequentially to the SDU in the

indicated PDU (column 10 line 35-36).

setting NLENGTI-I equal to 1; Yi et discloses setting NLENGTH to "1" (column

12 line 1-3).

setting up the LENGTH field accordingly. Yi et al. further discloses setting up the

LENGTH to 1 (column 12 line 34-35).

Yi et al. does not discloses while there exists a SN_MRWi field, other than the

SN_MRWLENGTH field, containing the same value as the N_MRWLENGTH

field has, deleting the SN_MRWi field containing the same value as the SN

MRWLENGTH field has; Torsner et al. discloses having a stall avoidance

mechanism and sequence ambiguity in an automatic repeat request protocol

(title). Torsner et al. further discloses if the data unit sequence numbering

scheme goes from 0 to 7 and then repeats modulo 8. In fig. 5A the transmitter

transmit a first set of eight data units having sequence numbers 0-7 by time T0.

By the time T1, the transmitter has transmitted a second set of eight data units

also having sequence numbers 0-7. In fig. 5B, the receiver has only received

data units 1,2,3, and 5 at time T0 and is missing data units 0, 4, 6 and 7...at T0

data unit 0 is deemed permanently missing and removed (page 4 paragraph 41

line 1-28).It is inferred the data unit is removed if the sequence number is equal

to respective sequence number of a   data unit.

     Therefore it would have been obvious to one having ordinary skill in the art

at the time of the invention was made to have discloses having a method for

transmitting data from the RLC layer in radio communication (title) as taught by

Yi et al. removing data units which has identical sequence numbers as taught by

Torsner to prevent delays and increase throughput rate.

     With regard to claim 2, in combination Yi et al. and Torsner et al. teaches

the method recited in claim 1. Wherein one of the trigger events is when a time

out occurs; Yi et al. discloses in fig. 7 an instruction to check if the PDU

transmission number that receives the MAX 720 then the SDU 10 and SDU13

may be discarded if the previously set transmission time in the timer for the SDU

10 and SDU13 expires or the prescribed number of transmission is limited (

column 11 line 43-48)... also in fig.7 the MRW mode indicator is configured.

With regard to claim 3, in combination Yi et al. and Torsner et al. teaches

the method recited in claim 1. Wherein one of the trigger events is that the

number of retry of sending a PDU exceeds the maximum number of

retransmission; Yi et al. discloses in fig. 7 an instruction to check if SDU 10 and

SDU13 may be discarded if the previously set transmission time in the timer for

the SDU 10 and SDU13 expires or the prescribed number of transmission is

limited (column 11 line 43-48)...also in fig.7 the MRW mode indicator is

configured.

With regard to claim 4, in combination Yi et al. and Torsner et al. teaches

the method recited in claim 1. Wherein setting up the SN M RELENGTHfield for

the last discarded SDU and the NLENGTHfield accordingly; Yi et al. discloses

"the parameter SN MRWLENGTH which represents the sequence number of the

PDU which belongs to (indicates) an end of the last discarded SDU (column 10

line 331-34)... NLENGTH which indicates that the last discarded SDU

corresponds sequentially to the SDU in the indicated PDU (column 10 line 35-

36).

further comprises the steps of. if the last discarded SDU ends in a PDU

containing the "Length Indicator" of the last discarded SDU and the PDU

contains no new SDU; Yi et al. discloses the NLENGTH indicates which LI (

length Indicator) in the PDU with sequence number SN_MRWLENGTH

corresponds to the last SDU (service data unit) to be discarded in the receiver (

column 11 line 30-33).

setting SN MRELENGTH equal to (the SN of the PDU containing the "Length

Indicator" of the last discarded SDU+I); Yi et al. discloses preferably SN_MRWi is

the sequence number of the PDU that contains the length indicator(LI) of the ith

SDU to be discarded in the receiver (column 11 line 15-19).

setting NLENGTHeqUal to O; Yi et al. discloses having NLENGTH equal to 0

(column 11 line 33) otherwise if the PDU contains at least one segment of a new

SDU; Yi et al. discloses having NLENGTH equal to 0... and the first data octet in

the PDU with sequence number SN_MRWLENGTH is the first data octet to be

reassembled next (column 11 line 33-37).

setting SN MRWLENGTH equal to (the SN of the PDU containing the "Length

Indicator" of the last discarded SDU); Yi et al. discloses preferably SN_MRWi is

the sequence number of the PDU that contains the length indicator(LI) of the ith

SDU to be discarded in the receiver (column 11 line 15-19).

and setting NLENGTH equal to 1; Yi et al. discloses having NLENGTH greater

than 0 (column 11 line 24).

With regard to claim 5, in combination Yi et al. and Torsner et al. teaches

the method recited in claim 1. Wherein setting up the LENGTH fie/d accordingly;

Yi et al. discloses having a LENGTH parameter (column 10 line 1).

further comprising the following steps of: if there is only one SN M_RWi fie/d in

the MRW SUF/ to be sent and the SN of the SN_MRWi fie/d extends above the

configured transmission window; setting LENGTH equa/to O; Yi et al. discloses

in fig. 6 the format of one SN M_RWi in MRW SUFI and in claim 5 Yi et al.

discloses that if the last discarded SDU transmitted   to the receiving side

exceeds a range of transmission window the LENGTH is set to "0000"(column

10 line 50-53 and column 11 line 1-5) and otherwise, setting LENGTH equal to

the number of SN_MRWi fields. Yi et al. discloses the Length field is used to

indicate the number of SN_MRWi fields in the super-field of type MRW. The

values "0001 through "1111" 1 through 15 SN_MRW I respectively (column 11

line 1-5).

       With regard to claim 6, in combination Yi et al. and Torsner et al. teaches

the method recited in claim 1. Wherein checking the status of the "Send MRW" ;

Yi et al. discloses when the a transmission mode MRW is configured, such as a

SEND MRW, a SN_MRW is configured is used to indicate the end of each

discarded SDU. That is the number of SN_MRWfileds equals the number of

SDUs discarded by the MRW SUFI (column 11 line 6-11). further comprising the

steps of." if a "Send MRW" flag is configured; Yi et al. discloses if the MRW mode

set indicator ("SEND MRW flag") is configured (column 9 line 6).

if there is more than 15 discarded SDUs; Yi et al. further discloses having a

LENGTH field is... is used to indicate the number of SN_MRW fields in the super-

field of type MRW(move receiving window). The values "0001" through "1111"

indicate 1 through 15 SN_MRWi respectively (column 11 line 1-5).However, it is

known in the art that sequence numbers can range from 0 to 4095.

setting up the MRW SUFI for the first 15 discarded SDUs; Yi et al. discloses the

Length field is used to indicate the number of SN_MRVVi fields in the super-field

of type MRW. The values "0001 through "1111" 1 through 15 SN_MRW I

respectively (column 11 line 1-5). handling the rest discarded SDUs accordingly;

Yi et al. discloses "o.. if the receiving side requests transmission when the

discard information has been entirely or partially transmitted to the receiving side,

the transmitting side sequentially transmits the numbered RLC PDUs to the

receiving side (column 13 line 46-67)."

and assigning each SN_MRWi with the SN of each corresponding discarded

SDU. Yi et al. discloses "... if at least portions of RLC SDU0 to RLC SDU4 fail to

be transmitted to the receiving side, the transmitting side sequentially numbers

the sequence numbers of the PDUs corresponding to the SDUs to be transmitted

subsequently thereafter from the sequence number of the presently-not-

transmitted PDU... if the receiving side requests transmission when the discard

information has been entirely or partially transmitted to the receiving side, the

transmitting side sequentially transmits the numbered RLC PDUs to the receiving

side (column 13 line 46-67)."

        With regard to claim 7, in combination Yi et al. and Torsner et al. teaches

the method recited in claim 6. Wherein handling the rest discarded SDUs

accordingly; Yi et al. discloses "... if at least portions of RLC SDU0 to RLC SDU4

fail to be transmitted to the receiving side, the transmitting side sequentially

numbers the sequence numbers of the PDUs corresponding to the SDUs to be

transmitted subsequently thereafter from the sequence number of the presently-

not-transmitted PDU... if the receiving side requests transmission when the

discard information has been entirely or partially transmitted to the receiving side,

the transmitting side sequentially transmits the numbered RLC PDUs to the

receiving side (column 13 line 46-67)." further comprising the steps of. if the

PDU that contains the Length Indicator of the fifteenth discarded SDU contains

all the rest discarded SDUs and at least one segment of an SDU that is not

discarded; Yi et al. discloses that the SN_MRW is the sequence number of the

PDU that contains the length indicator (LI) of the ith SDU to be discarded in the

receiver (column 11 line 15-18)... the SN_MRW fields in the super-field of type

MRW. The values "0001" through "1111" indicate 1 through 15 SN_MRWi

respectively (column 11 line1-3). Yi et al. further, discloses

neglecting the rest discarded SDUs; Yi et al. discloses if the transmission MRW

(move receiving window) mode indicator is not configured, the transmitting side

transmits a portion of the discard information to the receiving side (column 13 line

38-456).

and otherwise, handling the rest discarded SDUs in another MRW procedure. Yi

et al. discloses if the transmission MRW (move receiving window) mode indicator

is not configured, the transmitting side transmits a portion of the discard

information to the receiving side (column 13 line 38-456).

With regard to claim 8, in combination Yi et al. and Torsner et al. teaches the method recited in claim 1. *Wherein the length of the NLENGTH field can be one bit.* Yi et al. discloses having 1 bit1NLENGTH field.

With regard to claim 11, Yi et al. discloses having a sender using a modified MRW procedure to prepare a status PDU with a MRW SUFI to inform a receiver about moving its reception window boundaries or discarding certain SDUs, Yi et al. discloses having a method for transmitting data from the RLC layer in radio communication (title). Yi et al. further discloses "transmitting discard information about the discarded RLC SDU to the receiving side entirety when the transmission MRW (move receiving window) mode indicator is configured. wherein the procedure sets up the fields of a MRW SUFI, such as Type, LENGTH, SN_ MRWi, SN MRWLENGTH (the last SN_MRWi field) and NLENGTH accordingly (fig.3 and column 9 line 47-67); Yi et al. discloses having in fig. 3 a MRW SUFI with a type, LENGTH, SN_MRWi, SN MRWLENGTH (the last SN_MRWfield) and NLENGTH.
, and each PDU has been assigned a corresponding sequential number (SN), Yi et al. discloses the a sequence number mode of a PDCP layer is set, the PDCP layers of transmission and receiving sides reconcile the sequence numbers of PDCP PDUs (i.e. RLC SDU, column 9 line 6-9)..also in fig.5 Yi et al. discloses the each PDUs is assigned corresponding sequential numbers.
wherein the sender comprises:

means for triggering the MRW procedure upon a plurafity of trigger events;

Yi et al. discloses the a sequence number mode of a PDCP layer is set, the

PDCP layers of transmission and receiving sides reconcile the sequence

numbers of PDCP PDUs (i.e. RLC SDU). Therefore, the MRW mode set

indicator should be configured (column 9 line 6-10)

means for checking the status of a "Send MRW" and acting accordingly; Yi et al.

discloses in fig. 7 a flow chart that has a instruction to check the transmission

MRW (move receiving window) indicator 740 and further instructions are given

according to the result of the status.

means for setting up the SN MRWLENGTH field for the last discarded SDU and

the NLENGTH field accordingly; Yi et al. discloses "the parameter

SN_MRWLENGTH which represents the sequence number of the PDU which

belongs to (indicates) an end of the last discarded SDU (column 10 line 331-

34)... NLENGTH which indicates that the last discarded SDU corresponds

sequentially to the SDU in the indicated PDU (column 10 line 35-36). Yi et al.

does not discloses while there exists a SN_MRWi field, other than the

SN_MRWLEN~THfield, containing the same value as the SN_MRWLENGTHfield

has, deleting the SN_MRWi field containing the same value as the SN

MRWLENGTH field has; Torsner et al. discloses having a stall avoidance

mechanism and sequence ambiguity in an automatic repeat request protocol

(title). Torsner et al. discloses if the data unit sequence numbering scheme goes

from 0 to 7 and then repeats -modulo 8. In fig. 5A the transmitter transmit a first

set of eight data units having sequence numbers 0-7 by time TO. In. By the time

T1, the transmitter has transmitted a second set of eight data units also having

sequence numbers 0-7. In fig. 5B, the receiver has only received data units 1,2,3,

and 5 at time TO and is missing data units 0, 4, 6 and 7... at TO data unit 0 is

deemed permanently missing and removed (page 4 paragraph 41 line 1-28)

Therefore it would have been obvious to one having ordinary skill in the art

at the time of the invention was made to have discloses having a method for

transmitting data from the RLC layer in radio communication (title) as taught by

Yi et al. which include stall avoidance mechanism and sequence ambiguity in an

automatic repeat request protocol (title) as taught by Torsner to prevent delays

and increase throughput rate.

setting NLENGTH equal to 1; Yi et discloses setting NLENGTH to "1" (column

12 line 1-3).

setting up the LENGTH field accordingly. Yi et al. further discloses setting up the

LENGTH to 1 (column 12 line 34-35).

With regard to claim 12, in combination Yi et al. and Torsner et al.

teaches the method recited in claim 11. Wherein means for setting up the SN

MRWLENGTH field for the last discarded SDU and the NLENGTH field

accordingly; Yi et al. discloses "the parameter SN_MRWLENGTH which

represents the sequence number of the PDU which indicates an end of the last

discarded SDU (column 10 line 331-34)... NLENGTH which indicates that the

last discarded SDU corresponds sequentially to the SDU in the indicated PDU (

column 10 line 35-36).

further comprises: means for checking if the last discarded SDU ends in a PDU

containing the "Length Indicator" of the last discarded SDU and the PDU

contains no new SDU; Yi et al. discloses the NLENGTH indicates which LI (

length Indicator) in the PDU with sequence number SN_MRWLENGTH

corresponds to the last SDU (service data unit) to be discarded in the receiver(

column 11 line 30-33).

means for setting SN MRWLENGTH equal to (the SN of the PDU containing the

"Length Indicator" of the last discarded SDU+I); Yi et al. discloses preferably

SN_MRWi is the sequence number of the PDU that contains the length

indicator(LI) of the ith SDU to be discarded in the receiver (column 11 line 15-

19).

means for setting NLENGTHequal to O; Yi et al. discloses having NLENGTH

equal to 0 (column 11 line 33). ;

means for checking if the PDU contains at least one segment of a new SDU; Yi

et al. discloses having NI.ENGTH equal to 0.o. and the first data octet in the PDU

with sequence number SN_MRWLENGTH is the first data octet to be

reassembled next (column 11 line 33-37).

means for setting SN MRWLENGTH equal to (the SN of the PDU containing the

"Length Indicator" of the last discarded SDU); Yi et al. discloses preferably

SN_MRWi is the sequence number of the PDU that contains the length

indicator(LI) of the ith SDU to be discarded in the receiver (column 11 line 15-

19).

and means for setting NLENGTH equal to 1; Yi et al. discloses having NLENGTH

greater than 0 (column 11 fine 24).

With regard to claim 13, in combination Yi et al. and Torsner et al.

teaches the method recited in claim 11. Wherein means for setting up the

LENGTH field accordingly further comprising: means for checking if there is only

one SN_MRWi field in the MRW SUFI to be sent and the SN of the SN_MRWi

field extends above the configured transmission window;

means for setting LENGTH equal to O; Yi et al. discloses in fig. 6 the format of

one SN M RWi in MRW SUFI and in claim 5 Yi et al. discloses that if the last

discarded SDU transmitted to the receiving side exceeds a range of transmission

window the LENGTH is set to "0000"(column 10 line 50-53 and column 11 line

1-5).

and otherwise, means for setting LENGTH equal to the number of SN_MRWi

fields. Yi et al. discloses the Length field is used to indicate the number of

SN_MRWi fields in the super-field of type MRW. The values "0001 through

"1111" 1 through 15 SN_MRW I respectively (column 11 line 1-5).

With regard to claim 14, in combination Yi et al. and Torsner et al.

teaches the method recited in claim 11. *Wherein means for checking the status*

of the "Send MRW" ; Yi et al. discloses when the a transmission mode MRW is

configured, such as a. SEND MRW, a SN_MRW is configured is used to indicate

the end of each discarded SDU. That is the number of SN_MRW fileds equals

the number of SDUs discarded by the MRW SUFI (column 11 line 6-11).

further comprising: means for checking if a "Send MRW" flag is configured; Yi et

al. discloses if the MRW mode set indicator ("SEND MRW flag") is configured.

means for checking if there is more than 15 discarded SDUs; Yi et al. further

discloses setting up the MRW SUFI for the first 15 discarded SDUs; Yi et al.

discloses the Length field is used to indicate the number of SN_MRWi fields in

the super-field of type MRW. The values "0001 through "1111" 1 through 15

SN_MRW I respectively (column 11 line 1-5).

means for setting up the MRW SUFI for the first 15 discarded SDUs; Yi et al.

discloses the Length field is used to indicate the number of SN_MRWi fields in

the super-field of type MRW. The values "0001 through "1111" 1 through 15

SN_MRW I respectively (column 11 line 1-5).

means for handling the rest discarded SDUs accordingly; Yi et al. discloses "... if

the receiving side requests transmission when the discard information has been

entirely or partially transmitted to the receiving side, the transmitting side

sequentially transmits the numbered RLC PDUs to the receiving side (column 13

line 46-67)."

and means for assigning each SN_MRWi with the SN of each corresponding

discarded SDU. Yi et al. discloses "... if at least portions of RLC SDU0 to RLC

SDU4 fail to be transmitted to the receiving side, the transmitting side

sequentially numbers the sequence numbers of the PDUs corresponding to the

SDUs to be transmitted subsequently thereafter from the sequence number of

the presently-not-transmitted PDU... if the receiving side requests transmission

when the discard information has been entirely or partially transmitted to the

receiving side, the transmitting side sequentially transmits the numbered RLC

PDUs to the receiving side (column 13 line 46-67)."

With regard to claim 15, in combination Yi et al. and Torsner et al.

teaches the method recited in claim 14. *Wherein means for handling the rest*

discarded SDUs accordingly; Yi et al. discloses "... if at least portions of RLC

SDU0 to RLC SDU4 fail to be transmitted to the receiving side, the transmitting

side sequentially numbers the sequence numbers of the PDUs corresponding to

the SDUs to be transmitted subsequently thereafter from the sequence number

of the presently-not-transmitted PDU... if the receiving side requests transmission

when the discard information has been entirely or partially transmitted to the

receiving side, the transmitting side sequentially transmits the numbered RLC

PDUs to the receiving side (column 13 line 46-67)."

further comprising: means for checking if the PDU that contains the Length

Indicator of the fifteenth discarded SDU contains all the rest discarded SDUs and

at least one segment of an SDU that is not discarded; Yi et al. discloses that the

SN_MRW   is the sequence number of the PDU that contains the length indicator

(LI) of the ith SDU to be discarded in the receiver (column 11 line 15-18)o.. the

SN_MRW fields in the super-field of type MRW. The values "0001" through

"1111" indicate 1 through 15 SN_MRWi respectively (column 11 line1-3).

means for neglecting the rest discarded SDUs; Yi et al. discloses if the

transmission MRW (move receiving window) mode indicator is not configured,

the transmitting side transmits a portion of the discard information to the

receiving side (column 13 line 38- 456).

and otherwise, means for handling the rest discarded SDUs in another MRW

procedure. Yi et al. discloses if the transmission MRW (move receiving window)

mode indicator is not configured, the transmitting side transmits a portion of the

discard information to the receiving side (column 13 line 38-456).

Prior Art

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure

Kim et al. (US patent 7,130,295) discloses having a data retransmission

apparatus and method in a mobile communication system.

3rd Generation Partnership Project technical specification Group Radio

Access Network; RLC protocol specification .

Conclusion

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to DeWanda Samuel whose telephone number

is (571) 270-1213. The examiner can normally be reached on Monday-

Thursday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DeWanda Samuel
11/8/2007

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